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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,313	02/28/2002	Michael D. D. Clarke	7099.1626-00	6840

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EXAMINER

HERNANDEZ, OLGA

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/084,313

Applicant(s)

CLARKE ET AL.

Examiner

Olga Hernandez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/13/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,15,19-29,32,34,35 and 38 is/are rejected.
- 7) ☒ Claim(s) 2-4,16-18,30,31,33,36,37,39 and 40 is/are objected to.
- 8) ☒ Claim(s) 1-41 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION***Response to Arguments***

Applicant's arguments filed 4/13/04 have been fully considered but they are not persuasive. The applicant argues that the Pauly does not teach, "generating an aircraft routing proposal based on information describing a possible flight of an aircraft." The examiner disagrees. Pauly teaches inserting waypoints into preexisting flight plan, which is generating an aircraft routing proposal based on information describing a possible flight of an aircraft. The applicant further argues that Pauly does not teach, "determining a proposed flight assignment for the aircraft based on the generated aircraft routing proposal and complying with the information describing the possible flight of the aircraft." Again, the examiner disagrees. Pauly teaches automatically generating a proposed changed flight plan based upon inserting the waypoint into the nearest leg of the flight plan, which is determining a proposed flight assignment for the aircraft based on the generated aircraft routing proposal and complying with the information describing the possible flight of the aircraft. The applicant argues that Onken does not teach, "determining whether the proposed flight assignment meets a decision criterion describing requirements for aircraft routing." The examiner disagrees. Onken teaches a deviation from the provided flight plan is present if, for example, an air traffic control instruction that differs from the flight plan is fed into the system, or if, for example the pilot is obviously transferring the aircraft into a nominal status that differs from the provided flight plan. This recognize the difference flight altitude, a different course or different speed is assumed steadily, or nominal values deviating from the flight plan are inputted to the auto pilot, which is determining whether the proposed flight assignment meets a decision criterion describing requirements for aircraft

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routing. The applicant argues that Onken does not teach, "if the decision criterion is unmet, optimizing the proposed flight assignment such that the proposed flight assignment meets the decision criterion." Again the examiner disagrees. Onken teaches a discontinuity in the flight plan is present if a flight guidance/management system of the aforementioned type were to transmit a discontinuity indication to the pilot meaning the flight plan is not complete in its path guidance and/or in its altitude guidance, which is if the decision criterion is unmet, optimizing the proposed flight assignment such that the proposed flight assignment meets the decision criterion. Again, the applicant argues that Onken does not teach, "generating a flight assignment plan using the proposed flight assignment that meets the decision." The examiner disagrees. Onken teaches the flight altitude profile is automatically reestablished, which is now possible because the lateral flight path is known. For this purpose, if the flying-performance database of the flight guidance/management computer is provided, it can be used, which is generating a flight assignment plan using the proposed flight assignment that meets the decision. Aslin teaches: receiving information describing a possible flight of an aircraft, wherein the information includes maintenance and operational constraints (the LRU fault data is considered to be the operational constraint) (abstract); generating a flight network from the received information (column 11, figures 1 and 2); modeling *at least one* of the maintenance and operational constraints (column 12, lines 33-49).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 5, 7-15, 19, 20-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pauly (6,571,171) in view of Onken et al (6,163,744).

As per claim 1, 15, Pauly teaches:

- generating an aircraft routing proposal based on information describing a possible flight of an aircraft (abstract);
- determining a proposed flight assignment for the aircraft based on the generated aircraft routing proposal and complying with the information describing the possible flight of the aircraft (abstract).

Pauly does not teach:

- determining whether the proposed flight assignment meets a decision criterion describing requirements for aircraft routing;
- if the decision criterion is unmet, optimizing the proposed flight assignment such that the proposed flight assignment meets the decision criterion; and
- generating a flight assignment plan using the proposed flight assignment that meets the decision.

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However, Onken teaches:

- determining whether the proposed flight assignment meets a decision criterion describing requirements for aircraft routing (column 3, lines 22-30);
- if the decision criterion is unmet, optimizing the proposed flight assignment such that the proposed flight assignment meets the decision criterion (column 3, lines 30-37); and
- generating a flight assignment plan using the proposed flight assignment that meets the decision (column 4, lines 57-59).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the aforementioned inventions in order to automatically correct a change in the flight-relevant parameters and avoid any incident.

As per claims 5 and 19, both Pauly and Onken teach the information describing the possible flight of the aircraft includes *at least one* of flight information, aircraft information and maintenance information. Pauly (column 3) and Onken (abstract).

As per claims 6 and 20, Onken teaches the flight information includes a destination (column 5, lines 36-55).

As per claims 7, 8, 21 and 22, it would have been obvious (requested by FAA to enhance safety) that the navigation/maintenance data in any aircraft includes current location, remaining flight time, ready time, start time, end time and other kind of information (Onken, column 4, lines 50-65).

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As per claims 9 and 23, Onken teaches when approaching the airport, the pilot is instructed to fly a particular heading that deviates from the programmed flight path (column 5, lines 13-25). It would have been obvious that any kind of communication regarding the flight is done by a network, because a network is a communication means that comprises at least two nodes (transmitter and receiver).

3. Claims 10-13, 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pauly (6,571,171) in view of Onken et al (6,163,744) as applied to claim 1 above, and further in view of Nobe et al (5,657,231).

As per claims 10 and 24, neither Pauly nor Onken teach the use of a shortest path algorithm. However, Nobe teaches it in column 2, lines 6-9. Therefore, it would have been obvious to one of ordinary skill in the art to combine the aforementioned inventions in order to guide the vehicle to the destination on the basis of the automatically set shortest route so reducing the expenses.

As per claims 11, 12, 13, 25, 26 and 27, Nobe teaches the Dijkstra algorithm in column 2, lines 6-9. Further, it would have been obvious to one of ordinary skill in the art to use/implement any kind of algorithm/means that performs the same function in order to improve the response and accuracy of the proposed route. In re Karlson, 136 USPQ 184.

4. Claims 14 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pauly (6,571,171) in view of Onken et al (6,163,744) as applied to claim 1 above, and further in view of Zweben et al (6,216,109).

As per claims 14 and 28, neither Pauly nor Onken teach the branch and bound method. However, Zweben teaches it in column 4, lines 1-3. Therefore, it would have been obvious to

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one of ordinary skill in the art to combine the aforementioned inventions in order to satisfy certain conditions during the scheduled set of activities.

5. Claims 29, 32, 34, 35, 36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aslin (4,943,919) in view of Onken et al (6,163,744).

As per claims 29 and 35, Aslin teaches:

- receiving information describing a possible flight of an aircraft, wherein the information includes maintenance and operational constraints (the LRU fault data is considered to be the operational constraint) (abstract);
- generating a flight network from the received information (column 11, figures 1 and 2);
- modeling *at least one* of the maintenance and operational constraints (column 12, lines 33-49).

Aslin does not teach determining an aircraft routing proposal for the aircraft that satisfies the received information. However, Onken teaches it in column 4, lines 47-55. Therefore, it would have been obvious to one of ordinary skill in the art to combine the aforementioned inventions in order to automatically correct a change in the flight-relevant parameters and avoid any incident.

As per claims 32 and 38, it would have been obvious to one of ordinary skill in the art that any maintenance or operational constraint provide a flying time constraint, because no one would take a chance to operate an aircraft without verifying that it is in conditions to flight. So, it takes time to verify that everything is in order to avoid the possibility of an accident.

As per claim 34, Aslin teaches generating an occurrence of scheduled maintenance check constraint (column 1, lines 20-25).

Allowable Subject Matter

6. Claims 2-4, 16-18, 30, 31, 33 and 36-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Hernandez whose telephone number is (703) 305-0918. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm.

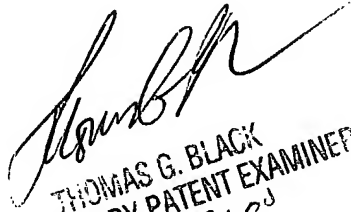
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (703) 305-8233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Olga Hernandez
Examiner
Art Unit 3661



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